

have particular evolutionary significance in that country. JDA (at the address below) will be very happy to receive and collate future interesting *Serinus* records from Ethiopia.

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 Addresses: J. D. Atkins, c/o FCO (Addis Ababa), King Charles Street, London SW1A 2AH. W. G. Harvey, c/o FCO (Nairobi), King Charles Street, London SW1A 2AH.

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## Notes on feeding behaviour, diet and anting of some cotingas

by Andrew Whittaker

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The following observations were made between 1987 and 1995, mostly in forest reserves of the Projeto Dinamica Biológica de Fragmentos Florestais (PDBFF), which consist of virgin *terra firme* forest and mosaics of *terra firme* forest with agricultural development (mostly cattle pasture). The reserves are situated 50–80 km north of Manaus.

The *terra firme* forest in these areas is found on nutrient-poor yellow latosols (Anon 1987) and has a continuous 30–50 m canopy with occasional emergents of 40–55 m. For further details, see Stotz & Bierregaard (1989) and Lovejoy & Bierregaard (1990). Some observations were made from a 42 m observation tower in virgin *terra firme* forest. I also made opportunistic observations during periods of travel in other parts of Amazonia, at sites that will be noted in the text.

Perhaps the main interest of these observations is that they show that a number of cotinga species that have been thought to be entirely frugivorous do take insects to some extent. They also include the first record of a cotinga taking a bat, and what may be the first record of a cotinga anting.

#### PURPLE-THROATED COTINGA *Porphyrolaema porphyrolaema*

So little is known about this species that all field observations seem worth recording. On 19 September 1993 in Alta Floresta, Mato Grosso (9°15'S, 56°00'W), I observed a pair of Purple-throated Cotingas along a road through disturbed *terra firme* forest. The pair were about 12 m up in a fruiting tree in which several other frugivorous birds were feeding on the abundant fruit. They were well separated within the tree, about 10–12 m apart. The female was perched near the tip of a branch, where she was eating dark bluish-coloured fruits of about 1 cm diameter, bending down almost vertically to pluck and swallow them. The male was also feeding, but I was unable to observe his methods before the pair flew from the tree. On 15 September 1994, again from the same road, I watched a female feeding in a fruiting *Cecropia* tree, clinging to the clump of fruit and hanging down while plucking off bits of the finger-like 'catkins' and eating them.

#### SPANGLED COTINGA *Cotinga cayana*

The males are most often seen perched high up on the topmost branches (often dead and bare) of a towering forest tree, perched motionless often for long periods of time. I have also occasionally seen this species, mostly female-plumaged birds, joining the roving mixed-species flocks in the canopy of the PBDFR reserves, but they are not nearly as regular in these flocks as the Pompadour Cotinga *Xipholena punicea*. I have also seen several groups of from 2 to 6 birds, mostly adult males, in the *igapó* forest (black-water flooded forest) of the Anavilhanas archipelago on the Rio Negro river during April–July of most years. These months, in which the river rises and floods the forest, are the main fruiting season for a large number of the *igapó* trees. Schomburgk (1848) reported recorded Spangled Cotingas in large feeding flocks in coastal Guyana.

Spangled Cotingas have hitherto been recorded feeding only on fruit. On 19 September 1993 I watched an adult male sallying for flying insects (almost certainly ants or termites) from near the top of an emergent forest tree; and on 13 January 1991 watched a female-plumaged bird moving slowly and deliberately through a line of trees, 25–30 m up, peering among the leaves, very much in the manner of a foraging Greyish Mourner *Rhytipterna simplex*. As there were no signs

of fruit in any of the trees, the bird was almost certainly foraging for insects.

I have watched Spangled Cotingas feeding on the catkin-like fruit of *Cecropia* trees on two occasions. An adult male and a female-plumaged bird fed by leaning down from a nearby branch and plucking pieces of fruit; an immature male plucked pieces of fruit off in flight, like a trogon, returning to a nearby branch to eat them.

#### **PLUM-THROATED COTINGA** *Cotinga maynana*

On 6 February 1992 in Seringal Occidente, Acre, I observed a male visiting a large lone *Cecropia* tree situated in a small orchard. The bird was seen briefly on several occasions feeding on the fruit. While perched he plucked off pieces of fruit and flew off with them into the adjacent forest. This behaviour is puzzling, as the little that is known about the breeding behaviour of *Cotinga* spp. (Snow 1982) indicates that males take no part in feeding young or in other nesting duties.

#### **PURPLE-BREASTED COTINGA** *Cotinga cotinga*

At 08.45 hrs on 19 June 1993, from the 42 m observation tower, I observed a female Purple-breasted Cotinga perched on a dead snag in the canopy within 20 m of the tower. She peered around, alert and with neck stretched forward; then perched motionless for another 30 seconds before flying down into the top of a neighbouring tree some 15 m away and out of sight. She re-appeared back on her original perch after about 5 minutes. Again she remained still for a couple of minutes before returning to the same tree again. This time I was able to see her through a gap in the foliage. She was shuffling her body, as if brooding, holding her wings slightly open, shaking them, and then preening under them. She was in fact anting; I could see several small black ants on the leaves and branches next to her. While perched she rotated her body through 180° on the dead branch, preening but still in a crouched posture. She was seen to lunge forwards on two occasions towards the ants, but I was unable to see any ants in her beak. She continued preening for about a minute before she hopped out of sight.

#### **POMPADOUR COTINGA** *Xipholena punicea*

I have regularly recorded female-plumaged Pompadour Cotingas accompanying large mixed-species flocks in the PDBFF reserves. Adult males seem very rarely to associate with these flocks, as also noted for the Spangled Cotinga. On five different occasions at the PDBFF I have seen single males sallying from tall trees for flying ants or termites. Previous records have indicated that the species is entirely frugivorous (Snow 1982).

In April 1991 and 1992 I saw small groups of 2–4 female-plumaged birds in the *igapó* forest of the Anavilhanas archipelago up river on the Rio Negro from Manaus; like the Spangled Cotingas mentioned above, they were feeding on the fruit that is abundant at that time of year.

At 07.00 hrs on 20 June, from the observation tower, I watched an adult male perched on a dead snag in the canopy at the top of a 30 m tree. After perching motionless for about 30 seconds, he started

regurgitating seeds. The seeds appeared to be surrounded by a sticky substance which caused them to stick to the bird's bill. As he wiped his bill from side to side on the branch to get rid of them, they remained stuck to it. The seeds were oblong, about 1 cm across and 0.5 cm wide. I watched him regurgitate 8 seeds over a period of about 1½ minutes. Most of them eventually fell off, but two remained stuck to the branch all day.

#### SCREAMING PIHA *Lipaugus vociferans*

At 07.30 on 23 January 1995 at Reserva Ducke, near Manaus, a Screaming Piha was observed about 20 m up in the sub-canopy of virgin *terra firme* forest, holding a 5–6 cm brown lizard *Anolis* sp. in its beak. The piha repeatedly hit the lizard's head against the branch until it was dead. The first two attempts to swallow the lizard head first were unsuccessful; each time the bird, after swallowing three-quarters of the lizard's body, regurgitated it. Finally, after re-arranging the lizard in its bill, it successfully swallowed it. This seems to represent the first record of this cotinga feeding on a reptile.

#### CAPUCHINBIRD *Perissocephalus tricolor*

On 3 December 1990, in the PDBFF forest reserve, my attention was attracted to the 'growling' contact call of a Capuchinbird. It was in the mid-story at a height of 10–12 m, some 25–30 m away from a mixed-species under-story flock mainly composed of antbirds, furnariids and woodcreepers. The Capuchinbird was perched almost motionless, moving only its head very slowly and apparently searching for prey. Similar behaviour was noted by Snow (1972), and I have also noted it on almost all occasions when I have observed Capuchinbirds foraging in the mid-story. I have only recorded them following mixed-species under-story flocks twice, once in the PDBFF reserve and once at Maracá Island, Roraima. After some minutes several alarm calls from birds in the flock alerted me to the fact that the Capuchinbird was on the move. Perhaps, because of its relatively large size, it was mistaken for a predator. It flew directly to another perch 8–10 m away, where it continued searching for prey. Then after about half a minute it left the perch and flew suddenly with a swift and direct flight, disappearing into a dense tangle of vines and leafy branches some 10–12 m away, where it remained hidden from my view. About 30 seconds later it flew out of the tangle with something large in its beak, and landed on a liana 8–10 m up and about 20 m in front of me. I was able to clearly see a live bat in its beak. The bat was dark brownish-black, about 6–8 cm in body length; it was still moving a little and had one wing hanging out of the bird's bill. The Capuchinbird then began to batter the bat against the liana. It continued to do so until the wings were manageable; this enabled it to hold the bat comfortably in its beak, whereupon it flew off strongly through the mid-story and out of sight, presumably to feed its young. An active Capuchinbird lek was located some 1.5 km away, in the direction in which it flew.

**BARE-NECKED FRUITCROW** *Gymnoderus foetidus*

On 21 August 1991, on the Rio Negro about 260 km northwest of Manaus, I observed three Bare-necked Fruitcrows sallying for insects from the tops of two huge emergent *Ceiba* trees about 100 m apart; a pair in one tree and a lone male in the other. They looked large and clumsy as they sallied almost vertically 15–30 m above the trees after flying insects. Although the flight was laboured, with a lot of flapping, several successful sallies were made. The fruitcrows were preying on a hatch of good-sized winged ants or termites. Between 05.45 and 06.00 hrs on 18 and 19 September 1993 at Alta Floresta, after a heavy rainstorm late on the previous day, I saw the same behaviour again. On this occasion three males were sallying for insects (almost certainly ants or termites) from the top of an emergent. Again the sallies were to 15–30 m, almost vertically, and all were successful, the birds returning either to the same perch or to another one. These seem to be the first records of this species feeding on insects.

I have seen Bare-necked Fruitcrows feeding on ripe *Cecropia* fruit on many occasions, along the banks of several Amazonian rivers, sometimes in close association with *Psarocolius oropendolas*. On 26 July 1994, near the mouth of the Rio Branco, I observed a lone male feeding on ripe Açaí (*Euterpe* sp.) palm fruits.

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*Address:* Andrew Whittaker, Projeto Dinâmica Biológica de Fragmentos Florestais, INPA, C.P. 478, Manaus 69011, Amazonas, Brazil. Present address: Conjunto Acariquara, Rua Samaumas 214, Manaus 69085-053, Amazonas, Brazil.